Exhibit

1

CHEMOURS' PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

As directed by the Court, Chemours submits the following proposed Findings of Fact and Conclusions of Law regarding Motion of Plaintiff West Virginia Rivers Coalition, Inc. ("WVRC") for a Preliminary Injunction ("WVRC's Motion").

Considering the Declarations of the parties' witnesses, the agreed-upon Stipulations, and the testimony and argument heard by the Court on May 21, 22, and 23, 2025, the Court makes the following Findings of Fact and Conclusions of Law:

I. FINDINGS OF FACT

Background – Procedural History

1. Plaintiff West Virginia Rivers Coalition ("WVRC") issued its citizen suit notice letters pursuant to the Clean Water Act in April 2024. ECF No. 1 ¶ 4.
2. WVRC filed its Complaint on December 5, 2024 and served the Complaint on January 9, 2025. ECF No. 1; ECF No. 4.
3. WVRC moved for a preliminary injunction on February 25, 2025. WVRC seeks an injunction ordering Defendant The Chemours Company FC, LLC ("Chemours") to come into compliance by any means necessary with its National Pollutant Discharge Elimination System ("NPDES") Permit. WVRC specifically seeks an injunction requiring immediate compliance with the Permit's limits on hexafluoropropylene dimer acid ("HFPO-DA") from Outlets 002 and 005 at Chemours' Washington Works plant. ECF No. 7.
4. WVRC alleges that Chemours' violations of the most stringent HFPO-DA limits in Chemours' NPDES Permit began in February 2022. ECF No. 1 ¶ 35; ECF No. 1-1 at 2.
5. WVRC therefore waited three years, until February 2025, to move for a preliminary injunction. ECF No. 1 ¶ 35; ECF No. 1-1 at 2; ECF No. 7.

6. Chemours responded to WVRC's Motion for a Preliminary Injunction on March 11, 2025. ECF No. 17.

7. WVRC filed its Reply supporting its Motion for a Preliminary Injunction on March 18, 2025. ECF No. 18.

8. The Court heard argument and witness testimony, and accepted exhibits into evidence, at a preliminary-injunction hearing held on May 21–23, 2025. ECF Nos. 77–79.

9. The Court directed WVRC and Chemours during the hearing to file five-page briefs answering the Court's questions on the applicable Fourth Circuit injunction standards. ECF No. 78 at 63:11–64:20. WVRC and Chemours filed their five-page briefs on May 30, 2025. ECF Nos. 75, 76.

10. The Court issued a post-hearing Order directing WVRC and Chemours to (1) file briefs on the issue of incremental harm and (2) file Proposed Findings of Fact and Conclusions of Law. ECF No. 70.

11. The Court's decision on WVRC's Motion for a Preliminary Injunction is pending.

Background – DuPont to Chemours & Washington Works

12. Chemours is a chemical company formed in 2015. Hollingsworth Decl., ECF No. 17-1 ¶ 5, 11.

13. Chemours owns a chemical manufacturing facility adjacent to the Ohio River in Wood County, West Virginia called the Washington Works plant ("WW"). ECF No. 17-1 ¶¶ 5–6.

14. Prior to 2015, E.I. DuPont de Nemours & Company ("DuPont") owned WW. ECF No. 17-1 ¶ 6.

15. DuPont spun off Chemours in 2015. ECF No. 17-1 ¶ 6.

Background – PFOA to HFPO-DA

16. DuPont previously used a compound called perfluorooctanoic acid ("PFOA") as a polymer processing aid at WW. ECF No. 17-1 ¶ 11.
17. DuPont voluntarily transitioned in 2013 from using PFOA to using HFPO-DA as a polymer processing aid at WW. ECF No. 17-1 ¶ 11.
18. DuPont's transition from PFOA to HFPO-DA was undertaken voluntarily under the United States Environmental Protection Agency's ("EPA") Voluntary Stewardship Program to reduce PFOA usage. ECF No. 17-1 ¶ 11.
19. DuPont chose HFPO-DA as PFOA's replacement because HFPO-DA has a more favorable toxicological profile than PFOA. ECF No. 17-1 ¶ 10.
20. EPA approved the manufacture of HFPO-DA in 2009 under the Toxic Substances Control Act. ECF No. 17-1 ¶ 10.
21. Chemours does not use PFOA. ECF No. 17-1 ¶ 11.
22. Chemours uses HFPO-DA in some of its manufacturing processes at WW. HFPO-DA is a critical part of the manufacturing process for Chemours' fluoropolymers. Stipulation, ECF No. 55 ¶ 2.

Background – NPDES Permit

23. The West Virginia Department of Environmental Protection ("WVDEP") issued an NPDES Permit to Chemours in 2018, which regulates effluent discharges from WW to the Ohio River. ECF No. 7-6.
24. The Permit's number is WV0001279. ECF No. 7-6.
25. The Permit took effect in September 2018. ECF No. 7-6.

26. The Permit sets daily maximum and monthly average limits for various compounds in WW's effluent to the Ohio River, including for PFOA and HFPO-DA. ECF No. 7-6.

27. The PFOA and HFPO-DA limits restrict the concentration of PFOA and HFPO-DA, respectively, that Chemours can discharge to the river from WW's Outlets. ECF No. 7-6.

28. WVDEP structured the Permit's HFPO-DA and PFOA limits to become gradually more stringent over time. ECF No. 7-6.

29. From September 1, 2018 to August 31, 2021, the Permit's HFPO-DA limits at Outlet 002 were as follows:

    a. Average monthly limit: 9 micrograms per liter (9,000 parts per trillion ("ppt")).

    b. Maximum daily limit: 32 micrograms per liter (32,000 ppt). ECF No. 7-6.

30. From September 1, 2021 to July 29, 2023, the HFPO-DA limits at Outlet 002 were reduced as follows:

    a. Average monthly limit: 1.4 micrograms per liter (1,400 ppt), which is 84 percent more stringent than the prior limit.

    b. Maximum daily limit: 2.3 micrograms per liter (2,300 ppt), which is 92 percent more stringent than the previous limit. ECF No. 7-6.

31. From September 1, 2018 to August 31, 2021, the Permit's HFPO-DA limits at Outlet 005 were as follows:

    a. Average monthly limit: 15 micrograms per liter (15,000 ppt).

    b. Maximum daily limit: 43 micrograms per liter (43,000 ppt). ECF No. 7-6.

32. From September 1, 2021 to July 29, 2023, the HFPO-DA limits at Outlet 005 were reduced as follows:

a. Average monthly limit: 1.1 micrograms per liter (1,100 ppt), which is 92 percent more stringent than the previous limit.

b. Maximum daily limit: 2.3 micrograms per liter (2,300 ppt), which is 94 percent more stringent than the previous limit. ECF No. 7-6.

33. Chemours received a compliance-deadline extension. The effective date for the most stringent HFPO-DA limits was extended to January 1, 2022, back from September 1, 2021. ECF No. 17-1 ¶ 26.

34. Chemours' 2018 Permit was administratively extended in 2023 and remains in effect today. ECF No. 55 ¶ 1.

Chemours has endeavored to comply with the Permit's limits.

Chemours identified abatement projects promptly after the Permit's issuance.

35. Within weeks of WVDEP issuing the 2018 Permit, Chemours hired a consultant, AECOM, to identify abatement projects to meet the Permit's impending stricter effluent limits. ECF No. 17-1 ¶ 16.

36. By 2019, Chemours began designing abatement projects based on AECOM's advice. ECF No. 17-1 ¶ 17.

37. By 2020, Chemours formally reviewed its abatement progress and determined based on sampling results to stop one project and move forward with five projects. ECF No. 17-1 ¶ 18.

38. The following projects were proposed, begun, or completed since July 30, 2018 and before April 23, 2023 to achieve or maintain compliance with effluent limits for HFPO-DA in the Permit: Granular Activated Carbon (GAC) Treatment at Ranney Well; Dryer Belt Wash Water Treatment; PTFE Tertiary Air Treatment; PFA Tertiary Abatement; Local Landfill

Seep Treatment for Outlet 001; and the B22 Sump Treatment Project. ECF No. 77 at 84:21–85:14.

39. Chemours regularly provided status updates to WVDEP regarding its abatement efforts. ECF No. 17-1 ¶ 19.

40. By the end of 2020, the company estimated that it would achieve compliance with the upcoming PFOA limits. ECF No. 17-1 ¶ 20. Less certain was compliance, specifically during wet weather, with the HFPO-DA limits. ECF No. 17-1 ¶ 21.

Chemours informed WVDEP about difficulty in complying with the stringent HFPO-DA limits.

41. Chemours notified WVDEP in April 2021 that complying with the HFPO-DA limits during stormwater events by September 2021 (the original effective date for the lowest limits) would not be attainable. ECF No. 17-1 ¶ 22.

42. Chemours thus sought a compliance-deadline extension. ECF No. 17-1 ¶ 21.

43. The company further explained that the COVID-19 pandemic caused unexpected delays from equipment suppliers beyond Chemours' control. ECF No. 17-1 ¶ 21, 23–24.

Abatement Delays Due to COVID-19

44. The COVID-19 pandemic caused supply interruptions for Chemours' abatement projects. For example, Calgon Carbon beds required for the proposed Dryer Belt Wash Water Treatment Project were unavailable for two months due to the pandemic. ECF No. 17-1 ¶ 24.

45. The pandemic similarly delayed delivery of valves for the same treatment project by approximately five months. ECF No. 17-1 ¶ 24.

46. In light of the pandemic's effects, Chemours received a compliance-deadline extension for the lowest HFPO-DA Permit limits. The new effective date for the most stringent limits was January 1, 2022. ECF No. 17-1 ¶ 26.

Post-Extension Discussions with Regulators & First Violation

47. In the months leading to the new deadline for compliance with the more stringent HFPO-DA Permit limits, Chemours continued its abatement efforts in the interim time. ECF No. 17-1 ¶ 27.

48. The company reiterated that it needed additional time beyond December 31, 2021 to implement HFPO-DA abatement systems and to meet the stringent HFPO-DA restrictions. Sept. 2021 Presentation, ECF No. 17-3 at 5.

49. Air deposition, the settling of HFPO-DA emissions to the ground, posed challenges in wet weather. ECF No. 17-1 ¶ 25.

50. Chemours assured the agencies that it recognized and was addressing challenges from air deposition and wet weather by installing tertiary air emissions abatement systems to further reduce air deposition. ECF No. 17-3 at 5.

51. Without a compliance-deadline extension, Chemours forecasted that it would violate the HFPO-DA limits taking effect January 1, 2022, despite the company's best efforts to come into compliance. ECF No. 17-1 ¶ 30.

52. As Chemours anticipated, discharges from Washington Works first exceeded the new HFPO-DA Permit limits in early February 2022 after days of rain and snowmelt. The company informed the appropriate government officials about the exceedance. Feb. 2022 Letter to WVDEP Regarding Exceedance, ECF No. 17-4.

EPA and Chemours are addressing the violations.

Administrative Order on Consent

53. After ongoing discussions, Chemours and EPA entered into an Administrative Order on Consent ("AOC") in April 2023 designed to address Chemours' exceedances of its NPDES Permit limits on HFPO-DA and PFOA at WW. ECF No. 7-18.

54. The AOC required that Chemours submit to EPA within 120 days an "Alternatives Analysis and Implementation Plan" ("AAIP") for the treatment of HFPO-DA and PFOA to ensure that discharges meet the numeric effluent limits at each of Outlets 001, 002, 005, and 006. ECF No. 7-18 ¶ 46. The AAIP is, in short, a plan to come into compliance with Chemours' Permit limits.

55. The AOC required the AAIP to include, among other things, "i. A characterization of the discharges at each Outlet, including the quality and quantity of process water and stormwater; ii. A discussion of available alternatives, including a cost analysis, to achieve compliance with the 2018 Permit . . . at such Outlet. . . . and iii. Selection of the recommended alternative, a justification and any supporting documentation, and implementation/construction schedule." ECF No. 7-18 ¶ 46.

56. Chemours submitted the AAIP to EPA in August 2023. ECF No. 7-16.

57. EPA formally responded on December 24, 2024, conditionally approving portions of the AAIP, rejecting others, and seeking re-submission. ECF No. 17-1 ¶ 34; ECF No. 55 ¶ 10.

58. Chemours submitted a revised AAIP to EPA on January 22, 2025. ECF No. 17-1 ¶ 34; ECF No. 55 ¶ 11.

59. Chemours sent a follow-up letter in March 2025 to EPA inquiring about the agency's review of the re-submitted AAIP. ECF No. 17-1 ¶ 34.

60. On March 24, 2025, EPA formally responded, rejecting the revised AAIP on the ground that the revised plan referenced and incorporated parts of the NPDES Permit renewal application that Chemours submitted to WVDEP in January 2025. ECF No. 55 ¶ 11.

61. Chemours submitted a new revised AAIP to EPA on April 3, 2025, addressing EPA's March 24, 2025 feedback. ECF No. 55 ¶ 11.

62. On May 16, 2025, EPA formally responded to Chemours' newly revised AAIP. In the response, EPA acknowledged "Chemours' interest in achieving compliance with the 2018 NPDES Permit as soon as possible" and stated that "EPA shares this sentiment." ECF No. 55 ¶ 11; Joint Exhibit 14, ECF No. 65-14 at 1.

63. In its May 16, 2025 letter, EPA approved one of the AAIP's projects, conditionally approved others, and deemed one project "not approvable at this time" and requested further discussion with Chemours on project drainage areas, stormwater flows, and drainage locations. One of the conditionally approved projects is the development of a Pollutant Minimization Plan ("PMP"), which is to include HFPO-DA trackdown studies to be implemented immediately. ECF No. 65-14 at 2–4.

64. WVDEP has been involved in the AAIP process. For example, EPA's May 16, 2025 letter states that EPA's response was made "in consultation with the West Virginia Department of Environmental Protection." ECF No. 65-14 at 1.

65. Chemours identified the following projects in the Supplemental AAIP that, once constructed, would reduce HFPO-DA and PFOA in WW's discharges: AOC NPDES West Well Field Groundwater Treatment; AOC NPDES East Well Field Groundwater Treatment; AOC NPDES Outfall 006 Drainage Area Stormwater Treatment; AOC NPDES

East Pad Outfall 001/011; AOC NPDES Process Contact Water Non Bio Treatment; and AOC NPDES Process Contact Water Bio Treatment. ECF No. 65-6 at 50.

B-22 Sump Treatment Project and Permit Renewal Application to WVDEP

66. In addition to the AOC and AAIP, Chemours simultaneously continues on-the-ground abatement efforts. As part of its permitting discussions with EPA and WVDEP, Chemours proposed the B-22 Sump Treatment Project in March 2024, a project that further reduces HFPO-DA concentrations in Outlet 005 discharges. ECF No. 17-1 ¶ 35.

67. After receiving WVDEP's approval for the B-22 Sump Treatment Project in August 2024, Chemours began operating that treatment project in February 2025. ECF No. 17-1 ¶ 35.

68. Chemours has also submitted to WVDEP a renewal application for its NPDES Permit. Chemours submitted the renewal application in February 2023 and submitted a revised application in December 2024 to align the application with proposals in Chemours' AAIP. The revised application contains proposals that, if approved, will bring Chemours into compliance with existing discharge limits (from the 2018 Permit) as well as potential future discharge limits (from the expected renewed NPDES Permit). ECF No. 17-1 ¶ 36; ECF No. 55 ¶ 7; ECF No. 7-4.

Irreparable Harm

WVRC alleges harm specifically to its drinking water.

69. In its Memorandum of Law supporting its Motion for a Preliminary Injunction, WVRC seeks an injunction specifically to protect the Ohio River as a drinking-water source. ECF No. 8 at 14 ("violations . . . will cause irreparable harm to the designated use of the Ohio River as a water source for Plaintiff's member").

70. WVRC's Memorandum of Law does not purport to seek an injunction to protect the Ohio River for recreational or aesthetic purposes. For example, it never refers to canoeing, kayaking, rafting, fishing, swimming, or sightseeing. ECF No. 8.

71. WVRC relies on a single member, Charlise Robinson, to show harm to WVRC's drinking water due to Chemours' Permit violations. ECF No. 8.

72. Ms. Robinson provided a Declaration filed with WVRC's Motion for a Preliminary Injunction. Robinson Decl., ECF No. 7-20.

73. Ms. Robinson gets her household water from the Lubeck Public Service District ("Lubeck"). ECF No. 7-20 ¶¶ 4,7.

74. Lubeck is downstream from WW. ECF No. 7-20 ¶ 7.

75. Lubeck retrieves its water from a groundwater aquifer. ECF No. 55 ¶ 12.

76. The aquifer from which Lubeck retrieves its water has preexisting per- and polyfluoroalkyl substances ("PFAS") contamination that pre-dates Chemours' incorporation in 2015. ECF No. 17-8 ¶ 18.

77. Lubeck's aquifer is near the Ohio River. ECF No. 18-2 at 19 (Figure 8). To the extent that the Ohio River recharges the aquifer, the recharge makes up only approximately 39% of Lubeck's pumped water. ECF No. 18-2 at 1.

78. Because of PFAS contamination in Lubeck's aquifer, DuPont agreed in a 2005 legal settlement to install, monitor, and maintain a granular activated carbon ("GAC") system at Lubeck that treats for PFAS the water that Lubeck delivers to its customers, including Ms. Robinson. ECF No. 17-8 ¶¶ 10, 24, 25, 27.

79. The Lubeck GAC system became operational in 2007. ECF No. 17-8 ¶ 24.

80. Chemours now monitors and pays for the maintenance of Lubeck's GAC system pursuant to an Operation, Maintenance and Monitoring Agreement. ECF No. 17-8 ¶¶ 24, 38.

81. The GAC system has two Calgon Model 10 units that operate in parallel. Each Model 10 unit consists of two 20,000-pound carbon vessels, the lead bed (which is the first PFAS-treatment step) and the lag bed (the second step in the system which further filters out PFAS compounds, including PFOA and HFPO-DA). ECF No. 17-8 ¶¶ 25–26, 28.

82. Pursuant to its monitoring of Lubeck's GAC system, Chemours samples Lubeck's treated water to see the concentrations of PFOA and HFPO-DA in Lubeck's treated water. ECF No. 17-8 ¶¶ 27–28.

83. As explained in more detail below, toxicologist Catherine Boston analyzed sampling results from Lubeck's treated water to conduct a human health risk assessment to determine whether HFPO-DA discharges from WW are likely to cause harm to Lubeck's customers. ECF No. 17-7 ¶¶ 11–12, 19–20.

84. In her Declaration, Charlise Robinson never alleges that she changed her behavior in any way in response to Chemours' Permit violations. Rather, she states only that she "became aware" of the Permit violations. ECF No. 7-20 ¶ 15.

85. Ms. Robinson alleges that she suffered preeclampsia in 2005 when pregnant with her child, which occurred two decades ago, ten years before Chemours' incorporation in 2015, and eight years before the start of HFPO-DA usage at WW. ECF No. 7-20 ¶ 11.

86. Ms. Robinson states that her "concerns about PFAS" in general, not about HFPO-DA in particular, have changed the way in which she uses her household water. For example, she states that she uses the water to brush her teeth and to wash vegetables. Ms. Robinson never explicitly claims that she has stopped drinking her household water altogether.

Instead, she says that she has stopped drinking water "directly distributed from a tap," implying that perhaps she filters her household water. ECF No. 7-20 ¶¶ 16–17.

87. Ms. Robinson never claims any form of irreparable injury resulting from the conduct at issue (i.e., Chemours' violations of its HFPO-DA Permit limits at Outlets 002 and 005). ECF No. 7-20.

88. Neither Ms. Robinson nor WVRC have provided any medical records linking Chemours' HFPO-DA Permit limit exceedances to any harm.

89. Neither Ms. Robinson nor any of WVRC's members testified at the preliminary-injunction hearing.

Water sampling at Lubeck does not show any risk.

90. Chemours retained toxicologist Catherine Boston to analyze potential harm to WVRC from WW's HFPO-DA discharges.

91. Ms. Boston is a board-certified toxicologist with over 15 years of experience. Boston Decl., ECF No. 17-7 ¶ 4.

92. She has a Masters of Public Health, Environmental Hazard Assessment and Toxicology, from Boston University's School of Public Health. ECF No. 17-7 ¶ 5.

93. Her areas of expertise are human health risk assessment, exposure assessment, and toxicological evaluations. ECF No. 17-7 ¶ 7.

94. Ms. Boston concludes that there are no potential adverse human health effects to WVRC from HFPO-DA in Lubeck's drinking water due to WW's discharges to the Ohio River. ECF No. 17-7 ¶ 12; ECF No. 78 at 117:23–118:6.

95. Ms. Boston reached this conclusion based on (1) her knowledge, skill, experience, training, and education and (2) factual materials including Lubeck sampling data. ECF No. 17-7 ¶ 12.

96. The data that Ms. Boston analyzed show HFPO-DA concentrations in Lubeck's finished drinking water after passing through Lubeck's GAC system. The data span from March 2023 to November 2024. The data derive from 44 samples—two samples collected of Lubeck's water (one sample for each Calgon Model 10 unit) on 22 days of sampling. ECF No. 17-7 ¶ 18, 19.

97. Over half of the samples—26 out of 44—were "non-detect" for HFPO-DA. In other words, HFPO-DA concentrations in 26 samples were so low that they measured less than 2.0 ppt. ECF No. 17-7 ¶ 19.

98. The highest HFPO-DA sampling result (40 ppt) is from May 20, 2024. A second sample from the same day, taken from the parallel treatment unit, shows HFPO-DA at 11 ppt. Samples from the next sampling date, June 17, 2024, were both non-detects. ECF No. 17-7 ¶ 19.

99. Using the 44 samples, Ms. Boston calculated annual average HFPO-DA concentrations well below 10 ppt in Lubeck's finished drinking water. ECF No. 17-7 ¶ 19.

100. For 2023, the annual average HFPO-DA concentration in Lubeck's finished drinking water was 5.3 ppt. For 2024, the annual average was 5.6 ppt. ECF No. 17-7 ¶ 20.

101. The annual averages are both below 10 ppt. ECF No. 17-7 ¶ 20.

102. 10 ppt is the level of HFPO-DA in drinking water below which EPA expects no risk to health. ECF No. 17-7 ¶ 20.

103. The 10 ppt HFPO-DA Maximum Contaminant Level ("MCL") that EPA announced in April 2024 is a value that EPA will eventually enforce against some public drinking water providers. Providers subject to the MCL will measure compliance, pursuant to EPA regulations, using annual averages. ECF No. 17-7 ¶¶ 15, 17, 26.

104. The 10 ppt MCL is a conservative value set to be protective of public health. ECF No. 17-7 ¶¶ 15, 28.

105. Ms. Boston additionally concluded, based on sampling of the Ohio River's raw water downstream of WW, that there are no potential adverse human health effects from WW's HFPO-DA discharges to the river. ECF No. 78 at 118:9–15.

106. The contents of WW's effluent from Outlets 002 and 005 discharging to the Ohio River are not reflective of what a person, like Charlise Robinson, would ingest through drinking water. Rather, sampling data collected from the Ohio River or from Lubeck's system are more representative of Ms. Robinson's potential exposure. ECF No. 17-7 ¶ 29.

107. In forming her opinions about potential harm, Ms. Boston "searched for everything [she] could find related to Dimer Acid data, both related to drinking water and also related to Dimer Acid data within the Ohio River." ECF No. 78 at 97:11–13.

Lubeck's Water Treatment

108. The Court heard testimony from Andrew Hartten, the Remediation Senior Manager in Chemours' Corporate Remediation Group, at the preliminary-injunction hearing. Mr. Hartten also provided a Declaration in this matter. Hartten Decl., ECF No. 17-8 ¶ 5.

109. In 2001, Chemours' predecessor DuPont signed a multimedia consent order with WVDEP that required the company to sample residential and public water supplies along the Ohio River. ECF No. 78 at 69:15–19.

110. DuPont later installed GAC treatment at Lubeck in 2007 as part of a legal settlement in the *Leach* case. ECF No. 78 at 69:22–70:10.

111. DuPont was also subject to a Safe Drinking Water Act Order issued in 2006 regarding PFOA in Lubeck's water system, requiring that the GAC system at Lubeck treat for PFOA. The Order has since been amended. Under the most recent amendment in 2017, the current treatment target of PFOA in Lubeck's water is a reduction to 70 ppt. ECF No. 78 at 70:23–71:4. The GAC system also removes HFPO-DA. ECF No. 78 at 72:23–25.

112. While never formally ordered to do so, Chemours began sampling Lubeck's treated water for HFPO-DA upon request in 2018; by approximately 2023, HFPO-DA levels were reported monthly. ECF No. 78 at 71:7–17.

113. The monitoring results at Lubeck in April 2024 showed higher levels of PFOA and HFPO-DA than normal. After an investigation, it was determined that a valve had been leaking. The valve was repaired within 48 hours of when the leak was discovered. ECF No. 78 at 73:9–23.

114. The leak at Lubeck was repaired by April 26, 2024. ECF No. 17-8 ¶ 34.

115. There has not been another similar problem with the GAC system at Lubeck since that time. ECF No. 78 at 74:6–8.

116. While sampling of Lubeck's treated water showed occasional HFPO-DA concentrations in excess of 10 ppt, the average annual level of HFPO-DA that Mr. Hartten calculated at 6 ppt, ECF No. 78 at 74:9–13, is consistent with Ms. Boston's calculation of annual average HFPO-DA in the Lubeck system of 5.3 ppt in 2023 and 5.6 ppt in 2024. ECF No. 78 at 91:8–15.

117. Mr. Hartten compared rainfall at Washington Works to the amount of HFPO-DA emitted from Outlets 002 and 005 from approximately January 4, 2024 to February 6, 2025. ECF No. 17-8 ¶¶ 42–45; ECF No. 78 at 75:3–76:22. Based on Mr. Hartten's comparison, he concluded that, while not all Permit exceedances are due to precipitation, large precipitation events seem to cause violations. ECF No. 78 at 76:3–22.

Louisville & Cincinnati Water Systems

118. Beth Hoagland, Ph.D. testified as a WVRC witness at the preliminary-injunction hearing, submitted a Declaration in this case, and at the hearing, was qualified as an expert in geochemistry and fate and transport. ECF No. 79 at 5:2–4.

119. Dr. Hoagland testified that the loads of HFPO-DA from WW being discharged into the Ohio River were "lower between late 2021 until approximately fall of 2024." ECF No. 79 at 14:2–4.

120. Dr. Hoagland testified that, although she reviewed the Declarations of Peter Goodmann (declarant on behalf of the Louisville Water Company) and Jeff Swertfeger (declarant on behalf of the Greater Cincinnatti Water Works) in forming her fate-and-transport opinions, she did not review any raw data that was presumably relied on in making those Declarations. For example, Dr. Hoagland did not review any lab reports or any Quality Assurance/Quality Control data associated with the Louisville or Cincinnati HFPO-DA data. ECF No. 79 at 76:7–18.

121. In short, Dr. Hoagland did not investigate the accuracy of the sampling and testing methods (which informed the Declarations of the Louisville Water Company and Greater Cincinnati Water Works employees) to confirm that such results were reliable. ECF No. 79 at 76:7–18.

Dr. Schlezinger's Opinions

122. Dr. Jennifer Schlezinger provided a Declaration in support of WVRC's Reply. ECF No. 18-1. She was also a WVRC witness at the preliminary-injunction hearing. ECF No. 78.

123. Dr. Schlezinger is a Professor of Environmental Health at Boston University. ECF No. 18-1 ¶ 4.

124. Her Declaration states that Chemours' discharges "increase[] risk." She concludes in full that "discharges of wastewater from the Washington Works Plan[t] in Washington, West Virginia, to the Ohio River[] increase[] risk of adverse human health effects." ECF No. 18-1 ¶ 11.

125. She does not state in her Declaration that irreparable harm is likely to befall WVRC between now and trial due to Chemours' violations of its HFPO-DA Permit limits for Outlets 002 and 005. ECF No. 18-1.

126. She does not state in her Declaration that any kind of harm, irreparable or not, is likely to befall WVRC between now and trial due to Chemours' violations. ECF No. 18-1.

127. She does not state in her Declaration that any kind of harm, irreparable or not, is likely to befall anyone between now and trial due to Chemours' violations. ECF No. 18-1.

128. Her Declaration offers opinions on HFPO-DA exposure in the abstract. She opines that "HFPO-DA is toxic," that studies show that HFPO-DA could "induce[] adverse effects in the liver, hematological system, and immune system," that studies show that HFPO-DA is "a developmental toxicant," that a rodent study shows that "a 14-week exposure to a low level of HFPO-DA in drinking water" caused "the development and function of the [rodent] placenta" to be "disrupted," and that "[e]xposures to mixtures of PFAS can cause combined toxic effects." ECF No. 18-1 ¶¶ 14, 17, 20.

129. Rodent response to PFAS exposure differs from human response to PFAS exposure, so toxicologist Catherine Boston states that animal study results—such as the study results Dr. Schlezinger relies on in forming her opinions—"need[] to be interpreted with caution." ECF No. 78 at 185:6–14.

130. Dr. Schlezinger "did not review any human data" in forming her opinions in this matter. ECF No. 78 at 227:24.

131. Dr. Schlezinger concedes that "the HFPO-DA concentrations [in Lubeck's treated water] may be compliant with the annual averaging requirements of EPA's maximum contaminant level." ECF No. 18-1 ¶ 16.

132. Dr. Schlezinger concedes that HFPO-DA leaves the human body within 14 days at most. ECF No. 78 at 236:1–2.

133. Although Dr. Schlezinger "would conclude that [Charlise Robinson] has suffered a harm or an injury," ECF No. 78 at 216:15–16, Dr. Schlezinger has not elaborated on (1) the nature of the alleged harm, (2) when the alleged harm arose, or (3) what cause or causes contributed to the alleged harm.

134. The Court asked Dr. Schlezinger if she has an opinion on "whether [Ms. Robinson] will continue to suffer additional harm or injuries if the level of the chemicals . . . continue at a level above the permitted level." The Court reminded Dr. Schlezinger that Ms. Robinson has suggested that "she stopped drinking the water" but still "brushes her teeth" with it. Dr. Schlezinger responded that she "cannot come to a conclusion" on whether Ms. Robinson will suffer harm. ECF No. 78 at 216:19–217:10.

135. Dr. Schlezinger provided contradictory testimony at the preliminary-injunction hearing. When Chemours' counsel asked Dr. Schlezinger how many times Charlise Robinson

would need to consume water with an HFPO-DA concentration over 10 ppt "for it to be likely that [Ms. Robinson is] going to suffer . . . liver disease," Dr. Schlezinger replied, "one day." When Chemours' counsel later asked Dr. Schlezinger the same question—"are you telling me that if I have it one time in 63 years that it is likely that I am going to suffer a liver disease?"—she responded, "No." ECF No. 78 at 237:24–238:14, 239:4–9.

136. She testified that consuming water with HFPO-DA concentrations at or above 10 ppt "increases the risk" and that she "cannot" say how much of an increased risk results. ECF No. 78 at 238:17–239:3.

Public Interest

Criticality of WW

137. WW is not only important to Wood County, West Virginia; it also makes products that are critical to the United States.

138. The processing units at issue—the PFA Line 1, FEP, PTFE Fine Powder, and PTFE Granular operations—create vital products for the medical-device, electric-vehicle, and semiconductor-manufacturing sectors, to name a few. ECF No. 17-1 ¶¶ 38–79.

139. WW produces FEP, a material used in medical devices including pharmaceutical stoppers, syringe plungers, and inhalers, and PTFE, which is used in medical guide catheters that are essential for performing minimally invasive surgeries. ECF No. 17-1 ¶¶ 47–48, 54–56, 58–60, 67–69.

140. A shutdown of WW would disrupt the supply of such products, putting at risk people who need FEP-equipped devices for their health or would otherwise need to undergo riskier surgical procedures should PTFE-coated guide catheters become less accessible. ECF No. 17-1 ¶¶ 58–60, 69.

141. The Court heard testimony from Katelyn R. Walck, currently the Americas Sales Director for Chemours' Advanced Performance Materials business unit and formerly the Global Semiconductor Market Segment Leader for the Advanced Performance Materials business, responsible for semiconductor segment growth and segment strategy for Chemours' Advanced Performance Materials business. ECF No. 78 at 24:24–25:25; Am. Decl. of K. Walck, ECF No. 17-9 ¶ 7.

142. WW is the only facility in the United States that produces Perfluoroalkoxy ("PFA"). All other PFA production in the world comes from Japan, China, and India. ECF No. 17-9 ¶ 9.

143. All semiconductor fabrication facilities, commonly referred to as "fabs," require significant amounts of PFA. ECF No. 17-9 ¶ 10.

144. Because PFA is vital to the operation of U.S. semiconductor fab infrastructure and microchip fabrication processes, it has been identified as being vital to the U.S. national security and economy. ECF No. 17-9 ¶ 11; ECF Nos. 66-3, 66-4.

145. Growth in U.S. semiconductor production and corresponding PFA demand is expected to align with global demand, as market growth and the deployment of CHIPS Act funding across the semiconductor ecosystem is expected to boost domestic demand for wafer fabrication equipment ("WFE") and bulk chemical distribution ("BCD") systems in semiconductor fabs. ECF No. 17-9 ¶ 12.

146. Expanding semiconductor production remains a strategic target in the U.S. As the sole U.S. manufacturer of PFA, Chemours is relied on for both the growth and continued operation of the domestic semiconductor industry. ECF No. 17-9 ¶ 13.

147. Chemours' PFA supply growth is constrained by its current capacity to manufacture PFA. Chemours expects that overall demand for PFA will increase as the demand for semiconductor chips increases over the next decade (or sooner). ECF No. 17-9 ¶ 14.

148. To support the growing needs of the semiconductor industry, Chemours built and began commercial operations of PFA Finishing Line 2 at WW in September 2024 after securing all required environmental permits. ECF No. 17-9 ¶ 15.

149. The domestic semiconductor supply chain relies heavily on PFA produced on both Line 2 and Line 1 at WW. Chemours' PFA has been the product of record for high-purity fluid handling in the semiconductor industry since the 1980s. PFA product made at WW enables the domestic supply chain and therefore protects U.S. national security and the economy. ECF No. 17-9 ¶ 16.

150. If Chemours cannot operate PFA Line 1 and Line 2, Chemours estimates that the semiconductor market will face an immediate shortage of multiple kilotons of PFA per year, significantly disrupting the planned semiconductor fabrication facility expansions in the U.S. ECF No. 17-9 ¶ 17.

151. Continued adoption of artificial intelligence and high-performance computing will drive the need for more advanced node and leading-edge fabs, which are estimated to require more PFA than is needed for legacy fabs. ECF No. 17-9 ¶ 18.

152. The loss of WW's PFA capacity has the potential to negatively impact the annual world output of chips. For context, announced CHIPS Act funding projects for Samsung, Micron, Intel, and TSMC ($28B of $39B in commercial semiconductor incentives) will go towards building and/or expanding 21 leading edge fabs across 8 different proposed

projects. These projects are estimated to create roughly 88,000 full-time and construction jobs in the U.S. ECF No. 17-9 ¶ 19.

153. WW provides PFAS products to approximately 500 customers directly and another 650 indirectly, some of whom serve end users in national security and other critical industries. ECF No. 78 at 28:12–29:3, 29:25–30:5, 31:9–16.

154. These critical industries include aerospace and national defense, automotive, telecommunications, semiconductor, domestic energy such as oil, gas, or nuclear energy, and healthcare and pharmaceutical. ECF No. 78 at 31:9–16.

155. Product lines at WW that generate HFPO-DA-containing wastewater include the PFA, PTFE, FEP, and FFR lines. ECF No. 78 at 27:4–8.

156. PTFE is used in military countermeasure flares and in sensors and telecommunications cabling in commercial and military aircraft. ECF No. 78 at 31:24–32:2.

157. Ms. Walck testified at the preliminary-injunction hearing about an August 2023 "Report on Critical Per- and Polyfluoroalkyl Substance Uses" from the United States Department of Defense ("DoD"). ECF No. 78 at 33:12–14; ECF No. 66-3.

158. The August 2023 Report states that "PFAS are common chemicals used across DoD." ECF No. 66-3 at 3; ECF No. 78 at 34:4–7.

159. The Report also states, "Most weapons platforms incorporate PFAS, and PFAS are found throughout the defense industrial base in roles supporting mission critical component production and supply." ECF No. 66-3 at 3; ECF No. 78 at 34:4–7.

160. The use of PFAS can be direct (i.e., present in a consumable end item) or indirect (i.e., used as part of a manufacturing process). ECF No. 78 at 34:9–13; ECF No. 66-3 at 3.

161. PFA in particular is necessary to the defense industrial base for production of microelectronic chips, and PTFE is used as a primary raw material in some lithium-ion batteries. ECF No. 78 at 36:19–37:8; ECF No. 66-3 at 3.

162. WW is the only source of PFA in the United States. ECF No. 78 at 37:1–3.

163. PFA is used in every microelectronic chip for every purpose. ECF No. 78 at 37:9–11, 37:24-39:9.

164. Some lithium-ion battery production requires PTFE. WW is one of 2 domestic producers of PTFE. ECF No. 78 at 37:3–8.

165. The August 2023 DoD Report states that "[k]inetic capabilities represent a direct use of PFAS, as PFAS are found in a variety of applications across the DoD munitions portfolio." ECF No. 78 at 40:1–3; ECF No. 66-3 at 7.

166. The DoD's August 2023 Report specifically references Chemours products Teflon and Viton as used in explosives and pyrotechnics. ECF No. 78 at 40:15–41:2; ECF No. 66-3 at 8.

167. The DoD identifies other industries it considers "Additional Mission Critical PFAS Uses" because "[a]lternatives are not as resistant to embrittlement and break-down and have a must shorter useful life, leading to more frequent part replacement, which is not feasible for space or satellite uses." ECF No. 66-3 at 14.

168. If alternatives to WW products could be found, they would need to be requalified. The qualification process takes at least 6 months and perhaps up to 2 years. ECF No. 78 at 41:8–19; ECF No. 66-3 at 8.

169. The DoD identifies a number of other products and applications that rely on the products produced (sometimes exclusively) at WW. ECF No. 66-3.

170. Generally, Def. Ex. 8 (ECF No. 66-3) credibly sets forth the importance of certain PFAS to the defense and national security of the United States.

171. Ms. Walck additionally testified at the preliminary-injunction hearing about a U.S. Department of Commerce National Security Fact Sheet. The U.S. Department of Commerce identifies the semiconductor market as an industry critical to the U.S. economy. ECF No. 66-4 at 3–5.

172. PFA, PTFE, FEP, and FFR produced at WW are used throughout the semiconductor manufacturing process. ECF No. 78 at 49:4–9.

173. The Department of Commerce credibly details in its "National Security Fact Sheet" products critical to the economy of the United States and the role of certain PFAS in the products' production. ECF No. 66-4.

174. Mr. Hollingsworth and Ms. Walck have credibly explained the role of WW products in providing certain PFAS directly or indirectly to critically important industries in the United States, such as the defense and national security, aerospace, automotive, telecommunications, semiconductor, healthcare, pharmaceutical, and domestic energy industries.

175. End users of fluoropolymers produced wholly or in part at WW rely on them because of their unique characteristics (such as chemical inertness and resistance to chemical, thermal, and physical degradation) and the fact that nothing else works. The materials are very expensive in the polymer market, are incredibly difficult to process, and are the only products which will work in the intended applications. ECF No. 17-1 ¶42-43; ECF No. 78 at 53:4–11.

176. In many instances, WW is the only domestic producer or one of only two domestic producers of PFAS for those industries identified as critical by the Department of Defense and the Department of Commerce.

Negative Impacts on Jobs from Reduction or Shutdown of Washington Works

177. WW is an industrial park, and Chemours is the landowner and has a facility at the site. ECF No. 77 at 58:3–4.

178. There are three other tenants at WW: Celanese, Derlin, and Kuraray. ECF No. 77 at 58:5–16.

179. Chemours manages the utilities provided to tenants at the industrial park, including steam, compressed air, water, electricity, natural gas, and nitrogen. ECF No. 77 at 58:17–22.

180. WW is a large chemical manufacturing facility in West Virginia, employing over 400 employees, and 148 contractors, in its fluoropolymer processes alone. Scaling down production will reduce the demand for labor, thus reducing jobs. ECF No. 17-1 ¶ 86.

181. If Chemours was ordered to reduce production at WW to zero, about 500 employees and resident contractors would no longer have jobs, resulting in a loss of about $70 million of annual payroll that is spent in the community. ECF No. 77 at 68:18–24.

182. A shutdown at WW would also affect Chemours' Louisville Works facility, located in Louisville, Kentucky, which supplies the raw material at WW. ECF No. 77 at 68:25–69:18. If WW were to shut down, Louisville Works would also shut down. Louisville Works currently employs about 125 people with an annual payroll of $20 to $25 million. ECF No. 77 at 69:11–14. WW is Louisville Works' sole customer. ECF No. 77 at 137:10–12.

183. Additionally, Chemours' Fayetteville Works facility, located in Fayetteville, North Carolia, would also be impacted if WW were to shut down because WW supplies Fayetteville Works its raw materials, and Fayetteville Works also supplies WW some of its raw materials. ECF No. 77 at 69:19–23. Fayetteville Works employees about 450 people and has an annual payroll in the $50 million range. ECF No. 77 at 69:25–70:3. If WW is not running, Fayetteville Works has no raw material. ECF No. 77 at 137:13–15.

184. Chemours' Chambers Works facility, located in New Jersey, would also be significantly impacted if WW were shut down because WW provides Chambers Works raw material for several products. ECF No. 77 at 70:8–15. If WW were shut down, about 125 people at Chambers Works would be impacted, resulting in a $20 million impact to payroll. ECF No. 77 at 70:10–11.

185. It is difficult to say whether it would be necessary to shut down the entire plant to achieve compliance with the Permit. ECF No. 77 at 70:22–71:6.

186. If WW was shut down, the majority of employees would no longer be employed. ECF No. 77 at 71:19–25. A small contingent of maybe twenty people would remain employed to provide utilities for the other tenants in the industrial park. ECF No. 77 at 71:25–72:3.

187. If Chemours were enjoined from continuing to operate, it would be required to shut down the facility, resulting in the loss of employment of everyone who works at the plant, except for about 20 jobs. ECF No. 77 at 72:8–73:14.

188. Shutting down just PFA Line 2 would not impact Outlets 002 and 005. ECF No. 77 at 75:17–20.

189. Chemours is not aware of any immediate actions it could implement short of shutting down the whole plant that would bring it into continuous compliance. ECF No. 77 at 76:2–9.

190. While production of the monomer facility, which produces the raw material TFE for the polymer units, could safely be reduced by some degree, it is very difficult to determine by how much. ECF No. 77 at 133:4–10. TFE is a cryogenic component that is very hazardous and has to be stored at minus 35 degrees at all times. ECF No. 77 at 133:10–12. As a result, Chemours has a very small storage capability in the plant for TFE. ECF No. 77 at 130:13–14. The monomer facility has a safe operating window, and the polymer units need to be using that TFE at about the same rate. ECF No. 77 at 133:14–20.

Balance of Equities

No Alternatives for Disposal/Offsite Shipping

191. Sending all wastewater containing HFPO-DA or PFOA off-site for disposal is not feasible. ECF No. 17-1 ¶¶ 80–84.

192. When Chemours began transporting process wastewater offsite from Fayetteville Works, it needed about 10 trucks daily, from dawn to dusk, to haul the process wastewater to a deep well in Texas. ECF No. 17-1 ¶ 84.

193. WW would require more than 884 trucks or 221 rail cars to haul its approximately 4.6 million gallons of process wastewater generated each day. ECF No. 17-1 ¶ 83.

194. The trucks and rail cars would need to move the wastewater to an off-site facility, likely at great distance, taking days to return. ECF No. 17-1 ¶¶ 81–84.

195. WW is not constructed to allow for such processing, and there would be neither enough trucks and rail cars available nor hours in the day to undertake the project. ECF No. 17-1 ¶ 84.

196. Transporting wastewater is not a possible option. ECF No. 77 at 73:15–20. For example, Outlet 005 has about 40 million gallons of water that flows through it per day. ECF No. 77 at 73:20–22. The amount of trucks that would be required for this type of off-site disposal is in the thousands, according to WW Plant Manager Mr. Hollingsworth. ECF No. 77 at 73:22–25.

197. Chemours is currently collecting HFPO-DA in every location at WW where such collection is feasible. ECF No. 77 at 74:7–9. Where Chemours can collect HFPO-DA, it does so and either treats the HFPO-DA waste onsite or disposes of it. ECF No. 77 at 75:4–8.

198. The issue is that the plant is so complex and there are so many commingled lines, Chemours does not have collection points in place to capture numerous process wastewater streams containing HFPO-DA. ECF No. 77 at 74:10–12.

199. Chemours is currently working with EPA, through the AAIP, to build these collection points, at which point the process wastewater containing HFPO-DA will be routed through on-site treatment systems. ECF No. 77 at 74:10–15.

Full or Partial Shutdown, TARs

200. "TAR" stands for turnaround and refers to a planned outage at WW to perform maintenance and safety inspections. ECF No. 77 at 85:15–19. The entire plant gets shut down, usually for a period of 50 to 55 days. ECF No. 77 at 85:20–25. During this time, there is no production, and the employees are performing inspections and maintenance.

ECF No. 77 at 86:1–11. No HFPO-DA is used during these outages. ECF No. 77 at 86:17–20.

201. Even though there is no production and no HFPO-DA being used during TARs, Chemours still has Permit exceedances at Outlets 002 and 005 during such shutdowns. ECF No. 77 at 87:7–19. This is attributable to past air deposition around the plant, meaning that HFPO-DA has settled onto the ground in the immediate region around the facility, causing exceedances during wet weather events. ECF No. 77 at 87:13–25.

202. If the Court ordered Chemours to stop production at the process units that use HFPO-DA, Chemours projects it would still have exceedances at Outlets 002 and 005. ECF No. 77 at 88:1–5.

II. CONCLUSIONS OF LAW

Nature of Preliminary Injunctions and the Movant's Burden

1. A preliminary injunction is an "extraordinary" and "drastic" remedy. *Di Biase v. SPX Corp.*, 872 F.3d 224, 230 (4th Cir. 2017); *Munaf v. Geren*, 553 U.S. 674, 689 (2008).
2. The burden on the party seeking a preliminary injunction is "exceedingly high." *Mahmoud v. McKnight*, 102 F.4th 191, 203 (4th Cir. 2024).
3. Federal judges are "not mechanically obligated to grant an injunction for every violation of law." *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 305 (1982).

The Four *Winter* Elements

4. The Supreme Court of the United States adopted a four-part preliminary-injunction standard in *Winter v. Natural Resources Defense Council, Inc.*, 555 U.S. 7 (2008).
5. Under *Winter*, a movant cannot secure a preliminary injunction unless it makes a "clear showing" that (1) it is likely to succeed on the merits; (2) it is likely to suffer irreparable

harm if preliminary relief is not granted; (3) the balance of equities favors it; and (4) an injunction is in the public interest. *Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7, 22 (2008).

6. The Fourth Circuit follows *Winter*'s four-part standard. *Real Truth About Obama, Inc. v. Fed. Election Comm'n*, 575 F.3d 342, 345–47 (4th Cir. 2009), *vacated on other grounds and remanded*, 559 U.S. 1089 (2010), *standard reaffirmed in* 607 F.3d 355 (4th Cir. 2010); *Vitkus v. Blinken*, 79 F.4th 352, 361 (4th Cir. 2023) (using the four-part *Winter* standard).
7. Each of the *Winter* factors must be established independently. *Pashby v. Delia*, 709 F.3d 307, 321 (4th Cir. 2013); *USA Farm Labor, Inc. v. Micone*, No. 23-2108, 2025 WL 586339, at *4 (4th Cir. Feb. 24, 2025) (same).
8. Failure to show any single *Winter* factor is sufficient for denial without evaluating the remaining factors. *Vitkus v. Blinken*, 79 F.4th 352, 361 (4th Cir. 2023).

Success on the Merits Prong

9. A plaintiff must "'clearly demonstrate that [they] will likely succeed on the merits,' rather than present a mere 'grave or serious question for litigation.'" *Am. Fed'n of State, Cnty. & Mun. Emps., AFL-CIO v. Soc. Sec. Admin.*, No. 25-1411, 2025 WL 1249608, at *62 (4th Cir. Apr. 30, 2025) (quoted authority omitted); *see also Blue Water Balt., Inc. v. Mayor & City Council of Balt.*, 635 F. Supp. 3d 392, 401 (D. Md. 2022) ("The movant must show more than a 'grave or serious question for litigation;' instead, it bears the 'heavy burden in showing its likelihood of success' at trial on the merits.").
10. In assessing the likelihood of success on the merits, "a district court must evaluate any factual conflicts or difficult questions of law." *Starbucks Corp. v. McKinney*, 602 U.S.

339, 349 (2024) (citing 11A Wright & Miller's Federal Practice and Procedure § 2948.3 (3d ed. 2013)).

Irreparable Harm Prong

11. The *Winter* irreparable-harm showing applies in Clean Water Act cases. *See, e.g.*, *Courtland Co. v. Union Carbide Corp.*, No. 2:21-cv-00101, 2021 WL 1255416, at *24–25 (S.D.W. Va. Apr. 5, 2021); *Coastal Conservation League v. U.S. Army Corps of Eng'rs*, No. 4:16-cv-03008-RBH, 2016 WL 6823375, at *18 (D.S.C. Nov. 18, 2016).

12. The irreparable-harm prong requires that the movant make a clear showing that it—not just a third party or the environment—will likely suffer irreparable harm in the absence of injunctive relief. *Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7, 20 (2008); *Hazardous Waste Treatment Council v. State of S.C.*, 945 F.2d 781, 787 (4th Cir. 1991); *E. Tenn. Nat. Gas Co. v. Sage*, 361 F.3d 808, 825 (4th Cir. 2004); *Courtland Co. v. Union Carbide Corp.*, No. 2:21-cv-00101, 2021 WL 1255416, at *24–25 (S.D.W. Va. Apr. 5, 2021).

13. The District Court for the Southern District of West Virginia explained that (1) the "traditional equitable analysis for obtaining preliminary relief requires a showing that the plaintiff itself will be irreparably harmed unless preliminary relief is granted," (2) a movant cannot "satisfy this requirement by showing only that, in the absence of relief, a third party will be harmed," (3) "the Supreme Court and Fourth Circuit have consistently described the irreparable-harm requirement as necessitating a showing of harm to the plaintiff," and (4) other federal courts "have also described the requirement in these same terms, even when the claims under review are Clean Water Act claims." *Courtland Co. v. Union Carbide Corp.*, No. 2:21-cv-00101, 2021 WL 1255416, at *24–25 (S.D.W. Va. Apr. 5, 2021) (underlines in original).

14. A mere possibility of harm is insufficient for securing a preliminary injunction because "a preliminary injunction based only on a possibility of irreparable harm is inconsistent with [the] characterization of injunctive relief as an extraordinary remedy." *Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7, 22 (2008).

15. The movant must show that its alleged irreparable harm is "neither remote nor speculative, but actual and imminent." *Mountain Valley Pipeline, LLC v. 6.56 Acres of Land, Owned by Sandra Townes Powell*, 915 F.3d 197, 216 (4th Cir. 2019) (quoting *Direx Israel, Ltd. v. Breakthrough Med. Corp.*, 952 F.2d 802, 812 (4th Cir. 1991)).

16. Movants seeking prohibitory preliminary injunctions as WVRC does here, *see* ECF No. 8 at 2, must particularly show that irreparable harm is likely during the case's pendency (*i.e.*, pending a court's permanent injunction ruling at trial). *Di Biase v. SPX Corp.*, 872 F.3d 224, 230 (4th Cir. 2017); *Murray v. Terry*, No. 2:18-cv-00942, 2018 WL 3543076, at *2 (S.D.W. Va. July 23, 2018).

17. Exceedances of NPDES permit limits alone are not *per se* irreparable harm. *Hudson Riverkeeper Fund, Inc. v. Yorktown Heights Sewer Dist.*, 949 F. Supp. 210, 212 (S.D.N.Y. 1996); *Newburgh v. Sarna*, 690 F. Supp. 2d 136, 164–74 (S.D.N.Y. 2010), *aff'd*, 406 F. App'x 557 (2d Cir. 2011); *Coal. for a Liveable West Side, Inc. v. N.Y.C. Dep't of Env't Prot.*, No. 92 CIV. 9011(DAB), 1998 WL 78285, at *4 (S.D.N.Y. Feb. 24, 1998); *Courtland Co. v. Union Carbide Corp.*, No. 2:19-cv-00894, 2024 WL 4339600, at *20 (S.D.W. Va. Sept. 27, 2024).

18. Federal courts have declined to issue injunctions on the ground that possible incremental harm from repeated exposures, without more, does not amount to likely irreparable harm.

See, e.g., *Washington v. U.S. Dep't of the Navy*, No. 2:19-cv-01059-RAJ-JRC, 2020 WL 8678103, at *8–9 (W.D. Wash. July 22, 2020).

Balance-of-the-Equities Prong

19. To evaluate the balance of the equities, courts weigh potential harm to the movant in the absence of injunctive relief against potential harm to the nonmovant from an injunction. *See Mountain Valley Pipeline, LLC v. W. Pocahontas Props. Ltd. P'ship*, 918 F.3d 353, 366 (4th Cir. 2019); *Courtland Co. v. Union Carbide Corp.*, No. 2:21-cv-00101, 2021 WL 1255416, at *26 (S.D.W. Va. Apr. 5, 2021) (same).

20. The balance-of-the-equities analysis considers harm only "to the parties, not to the environment." *Coastal Conservation League v. U.S. Army Corps of Eng'rs*, No. 4:16-cv-03008-RBH, 2016 WL 6823375, at *19 (D.S.C. Nov. 18, 2016) (citing *Winter*, 555 U.S. at 24).

21. "Courts have accorded great weight to considerations of national security when balancing the interests and equities of the parties." *Nat. Res. Def. Council, Inc. v. Peña*, 972 F. Supp. 9, 20 (D.D.C. 1997).

22. Evaluating national security in the balance-of-equities analysis, the First Circuit Court of Appeals explained "that the balance of equities favored the defendants, who pointed to concrete national security concerns over the more abstract harm to species asserted by [the movant], and that the public interest would consequently be harmed by a grant of injunctive relief." *Water Keeper All. v. U.S. Dep't of Def.*, 271 F.3d 21, 29 (1st Cir. 2001).

Public Interest Prong

23. Federal courts "should pay particular regard for the public consequences in employing the extraordinary remedy of injunction." *Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7, 24 (2008) (quoting *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 312 (1982)).

24. An injunction affecting the supply of medical devices works against the public interest. *See Hybritech Inc. v. Abbott Lab'ys*, No. CV 86-7461/AK (PX), 1987 WL 123997, at *21 (C.D. Cal. July 14, 1987).

25. An injunction disrupting roadway traffic was found to be against the public interest. *See Coal. to March on the RNC v. City of Milwaukee*, No. 24-cv-0704-bhl, 2024 WL 3358149, at *21 (E.D. Wis. July 8, 2024) (denying a preliminary injunction in part because an injunction would put at risk "orderly traffic regulation").

26. An injunction negatively impacting employee wages works against the public interest. *USA Farm Labor, Inc. v. Micone*, No. 23-2108, 2025 WL 586339, at *4–5 (4th Cir. Feb. 24, 2025) (affirming the denial of a preliminary injunction that, if granted, would have affected workers' wages).

27. The loss of employment from the shutdown or de facto shutdown of WW is a factor for the Court to consider when deciding whether a preliminary injunction is in the public interest. *See Sogefi USA, Inc. v. Interplex Sunbelt, Inc.*, 538 F. Supp. 3d 620, 630 (S.D.W. Va. 2021) ("Keeping a supply chain open keeps people working, . . . keeps companies producing important products, and keeps important products in the marketplace. . . . [D]isruption of the supply chain would not only hurt [the producing company], but the public as well.").

28. "The effect of a preliminary injunction on the public interest is directly tied to its impact on both military preparedness and the endangered and threatened species. For the same reasons laid out above, the district court did not abuse its discretion in finding that the

public interest weighed in favor of denying a preliminary injunction." *Water Keeper All. v. U.S. Dep't of Def.*, 271 F.3d 21, 35 (1st Cir. 2001).

Special Competence of the EPA

29. The Court should consider the extent of EPA's involvement in determining whether to grant or deny a preliminary injunction in this case. "In articulating and refining the doctrine [of special competence of an administrative agency], the Supreme Court has cautioned that 'in cases raising issues of fact not within the conventional experience of judges or cases requiring the exercise of administrative discretion, agencies created by Congress for regulating the subject matter should not be passed over.'" *Wilson v. Amoco Corp.*, 989 F. Supp. 1159, 1169 (D. Wyo. 1998) (quoting *Far E. Conf. v. United States*, 342 U.S. 570, 574 (1952)).

30. "Courts have found the following factors helpful in determining the doctrine's applicability: (1) whether the Court is being called on to decide factual issues not within the conventional experience of judges; (2) whether the Defendants could be subjected to conflicting orders of both the Court and the administrative agency; (3) whether relevant agency proceedings have actually been initiated; (4) whether the agency has demonstrated diligence in resolving the issue or has instead allowed the issue to languish; and (5) whether the Court can fashion the type of relief requested by the plaintiff." *Wilson v. Amoco Corp.*, 989 F. Supp. 1159, 1169 (D. Wyo. 1998) (citations omitted).

EPA's Maximum Contaminant Level and Maximum Contaminant Level Goal - HFPO-DA

31. EPA promulgated in 2024 Maximum Contaminant Levels ("MCLs") for several PFAS compounds, including for HFPO-DA, under the Safe Drinking Water Act. *See* 40 C.F.R. § 141.61(c)(2).

32. An MCL is "the maximum permissible level of a contaminant in water which is delivered to any user of a public water system." 40 C.F.R. § 141.2 ("Definitions"). It is an enforceable limit.

33. The HFPO-DA MCL is set at 10 parts per trillion. 40 C.F.R. § 141.61(c)(2).

34. EPA gave public water systems until April 26, 2029 to come into compliance with the PFAS MCLs—in total, five years to comply. 40 C.F.R. § 141.6(l).

35. Compliance with the HFPO-DA MCL is determined by running annual averages at the sampling point. 40 C.F.R. § 141.903 ("Compliance Requirements"). That is, if a single "sample result exceeds an MCL, the system will not be considered in violation of the MCL until it has completed one year of quarterly sampling at the sampling point with the triggering sample used as the first quarter of monitoring for the running annual average calculation." 40 C.F.R. § 141.903(e).

36. EPA determined that 10 parts per trillion of HFPO-DA in drinking water is the "level . . . at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety." *See* 40 C.F.R. § 141.2 (defining Maximum Contaminant Level Goal or "MCLG"); 40 C.F.R. § 141.50(b) (stating that the HFPO-DA MCLG is 10 parts per trillion).

37. EPA has announced that it plans to rescind the HFPO-DA MCL.

Injunctions Should Be Narrowly Tailored

38. The Fourth Circuit recognizes "the need to narrowly tailor preliminary relief." *Mountain Valley Pipeline, LLC v. 6.56 Acres of Land, Owned by Sandra Townes Powell*, 915 F.3d 197, 217 (4th Cir. 2019) (citing *PBM Prods., LLC v. Mead Johnson & Co.*, 639 F.3d 111, 128 (4th Cir. 2011)).

39. Injunctions particularly should "be no more burdensome to the defendant than necessary to provide complete relief to the plaintiffs." *Madsen v. Women's Health Ctr., Inc.*, 512 U.S. 753, 765 (1994).

40. The Fourth Circuit follows that directive. *Mayor of Balt. v. Azar*, 973 F.3d 258, 293 (4th Cir. 2020); *see also Roe v. Dep't of Def.*, 947 F.3d 207, 231 (4th Cir. 2020) (stating that courts issuing injunctions "should 'mold [their] decree to meet the exigencies of the particular case'" and "ensure" that injunctions are "no more burdensome to the defendant than necessary").

Standing

41. Under Article III of the United States Constitution, a plaintiff must establish standing to sue for each form of relief sought. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–61 (1992); *Jonathan R. v. Morrisey*, No. 3:19-cv-00710, 2025 WL 655811, at *2 (S.D.W. Va. Feb. 28, 2025).

42. An organization may have standing to sue based on injury to itself or as the representative of its members who have been harmed. *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, 204 F.3d 149, 155 (4th Cir. 2000). (Here, Plaintiff WVRC purports to represent its members. ECF No. 8 at 8–9.)

43. An organization has representational standing when, *inter alia*, at least one of its members has individual Article III standing. *Friends of the Earth, Inc. v. Laidlaw Env't Servs., Inc.*, 528 U.S. 167, 181 (2000).

44. To have such standing, a member must show that she "suffered or [is] imminently threatened with a concrete and particularized 'injury in fact' that is fairly traceable to the challenged action of the defendant and likely to be redressed by a favorable judicial

decision." *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 572 U.S. 118, 125 (2014).

45. "To establish injury in fact, a plaintiff must show that he or she suffered 'an invasion of a legally protected interest' that is 'concrete and particularized' and 'actual or imminent, not conjectural or hypothetical.'" *Beck v. McDonald*, 848 F.3d 262, 270 (4th Cir. 2017) (quoted authority omitted).

46. "While it is true 'that threatened rather than actual injury can satisfy Article III standing requirements,' not all threatened injuries constitute an injury-in-fact. Rather, as the Supreme Court has 'emphasized repeatedly,' an injury-in-fact 'must be concrete in both a qualitative and temporal sense.'" *Beck v. McDonald*, 848 F.3d 262, 271 (4th Cir. 2017) (quoted authorities omitted).

47. Although the threat of harm can support Article III standing, the threat of harm must be so significant that harm is likely to materialize. *Clapper v. Amnesty Int'l USA*, 568 U.S. 398, 409 (2013) (stating that "threatened injury must be *certainly impending* to constitute injury in fact" and that claims "'of *possible* future injury' are not sufficient") (emphasis in original).